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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,079	11/09/2001	Peter V. Schwartz	SCH WPE.004A	2692

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,079

Applicant(s)

SCHWARTZ, PETER V.

Examiner

Ram N Kackar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 13-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-21 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (i).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/5/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-12 drawn to an apparatus, classified in class 118, subclass 725.
 - II. Claims 13-21 drawn to a method, classified in class 427, subclass 585.
2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as etching.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Nancy Vensko on 2/13/04 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Maejima et al (JP 60119727).

Maejima et al disclose a conductive heater block (Abstract and Fig 2-7) and a conductive heater positioned in a cylindrical cavity (8), of the heater block.

8. Claims 1-2 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Futaki et al (JP 09001610).

Futaki et al disclose a conductive heater block (Fig 1) and a conductive heater positioned in a cylindrical cavity (3), of the heater block.

9. Claims 1-2 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hall et al (US 3514575).

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Hall et al disclose a conductive heater block (Fig 1) and a conductive heater positioned in a cylindrical cavity (5), of the heater block.

10. Claims 1, 3-5, 10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Futakuchiya et al (US 6180931).

Futakuchiya et al disclose a conductive heater block of copper, copper alloy, aluminum or steel (Fig 1-7, Col 1 lines 13-21, Col 3 lines 55-67), a conductive heater positioned in a cylindrical cavity (Fig 1-2a, 4; Fig 5-7 12), of the heater block and full cut extending to cavity configured to heat susceptor and electrostatic chuck (Col 1 lines 13-20).

Claim Rejections - 35 USC § 103

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchiya et al (US 6180931).

Futakuchiya et al disclose a conductive heater block, a conductive heater positioned in a cylindrical cavity of the heater block configured to heat susceptor and electrostatic chuck (Col 1 lines 13-20).

Futakuchiya et al do not clearly disclose that the support surface of the susceptor, which is disclosed to house the heater, is of one-piece construction.

However, making elements integral was held to have been obvious. *Nerwin v. Erlichman* 168 USPQ 177 (PO BdPatApp 1969); *In re Wolfe* 116 USPQ 443 (CCPA 1958); *In re Howard* 150 US 164 (USSC 1893). Similarly, making elements separable was held to have been obvious. *In re Dulberg* 129 USPQ 148 (CCPA 1961).

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12. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchiya et al (US 6180931) in view of Shih-Tsung Liang (US 5934947) and Petreto (US 5938663).

Futakuchiya et al disclose a conductive heater block of copper, copper alloy, aluminum or steel (Fig 1-7, Col 1 lines 13-21, Col 3 lines 55-67), a conductive heater positioned in a cylindrical cavity (Fig 1-2a, 4; Fig 5-7 12), of the heater block and full cut extending to cavity configured to heat susceptor and electrostatic chuck (Col 1 lines 13-20).

Futakuchiya et al disclose the need for good bonding but do not disclose a partial cut to provide flexibility to the heater block for good contact for efficient heat transfer.

Shih-Tsung Liang discloses a structure to provide good contact of a clamp on a cylindrical post by using a through cut upto the cavity which contains the post as in a battery connector (Fig 1).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use a structure taught by Shih-Tsung Liang to apply to the heater block of Futakuchiya et al where a single heater would be needed in order to provide good contact for efficient heat transfer.

Shih-Tsung Liang however does not disclose partial cut to provide flexibility for bending the clamp like structure.

Petreto discloses that a partial cut (Fig 6-30) and a straight through cut 25 provide flexibility to the ring 24. Obviously flexibility lets the clamp conform to the shape of the cylindrical body.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use a structure taught by Shih-Tsung Liang as modified by Petreto to apply to the

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heater block of Futakuchiya et al where a single heater would be needed in order to provide efficient heat transfer.

Regarding the limitation of yield strength, since the materials for the heater block of Futakuchiya et al are same as claimed, it is obvious that the yield strength would also be same. Yield strength of steel is known to be more than 200 Mpa.

Regarding the thickness of material left by the partial cut, it would be obvious that too much removal of material would leave it weak and reduce its life over several times of opening and closing for maintenance.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchiya et al (US 6180931) in view of Merrit et al (US 4510377).

Futakuchiya et al disclose a conductive heater block of copper, copper alloy, aluminum or steel (Fig 1-7, Col 1 lines 13-21, Col 3 lines 55-67), a conductive heater positioned in a cylindrical cavity (Fig 1-2a, 4; Fig 5-7 12), of the heater block and full cut extending to cavity configured to heat susceptor and electrostatic chuck (Col 1 lines 13-20).

Futakuchiya et al do not disclose the detailed structure of the conductor heater, especially that the inner conductor is wound over an insulator.

Merrit et al disclose a cartridge heater with an inner conductor over a ceramic insulator embedded under another ceramic split ring and enclosed in a metal housing (Abstract and Fig 1-2).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have ceramic on both sides of the resistance heating wire to have electrical insulation and have conductive sheath of metal for good heat transfer and mechanical strength.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK

*P. Hassanzadeh
primary Examiner
AU 1763*